

REMARKS / ARGUMENTS

The inventor, James Burrell, originally wanted to use the following Claim:

1. A first four bit code combined with a second four bit code to produce data.

In the reply to the Final Office Action dated August 15, 2003, the Claims were amended closer to what the inventor wanted the Claims to read and claim. The Claims amendments were not satisfactory for the Examiner, and were not entered. The Examiner stated that changing the claims to read: "A first four bit code combined with a second four bit code to produce data" would require an additional search for a first 4-bit code combined with second 4-bit code in 16-bit and 32-bit prior art technologies. A proper and thorough prior art search on the subject matter claimed in the original Claim 1 should have included all 8 bit codes and any 4-bit code combined another 4-bit code and Claim 9 of the present patent application:

"A method of using a first four bit code combined with a second four bit code on at least eight sensors, in accordance with claim 3, comprising the step of:

activating at least one said sensor of said eight sensors followed by the activating of at least one said sensor of said eight sensors to produce a data character.",
would include all 16-bit prior art technologies. An increase or a reduction in the amount of parts as a whole to produce the desired invention, the amount of keys, sensors or bits used to represent data would constitute an improvement over any prior art. The improvements to Burrell, IV (5,993,089) by Burrell, IV, which is found in the pending patent application is not in any prior art and would constitute an improvement in tactile reading and method of universal data entry technology for one or two handed individuals. After a phone

conference with the Examiner in November and in December, the Claims have been amended once again for the satisfaction of the Examiner and issuance.

All prior art 8 bit codes do not contain the Euro “€” monetary symbol. In older browsers and word processors the Euro “€” is displayed as a combination of three characters; the “â”, the comma “,” and the “¬” (€ = â,¬).

In every Office Action Rejection returned, the Examiner has continually asserted his opinion that Burrell, IV (5,993,089) is a first 4-bit code combined with a second 4-bit code. In the present patent application, FIGS. 1A-B, 1C-D, 1E-F, 1G-H, 1I-J, 1K-L, 1M-N, 1O-P, 3A, 3B, 3C-D, 3E-F, 3G-H, 3I-J, 3K and 3L all show an a first 4-bit code combined with a second 4-bit code. Amended FIGS. 4A and 4B-C show a standard 6-dot braille cell on the top of a data character and a true 4-dot braille cell next to a true 4-dot braille cell on the bottom. Added FIGS. 5A and 5B-C, for the use of the Examiner only, show a true 3-dot braille cell next to a true 3-dot braille cell on the top of a data character and a standard 8-dot braille cell arrangement on the bottom. In FIG 1E, 1D, 3D, 3E, 3F and 6 and in Claims 10 and 22 Burrell, IV (5,993,089) shows, teaches and claims 8-dot braille and in FIGS. 1A, 1B, 1C, 1F, 3A, 2A-C, 2D-E, 2F-H, 2I-J, 2K, 2L, 2M1-6, 3B, 3C, 4A, 4B, 4C and 5 and in Claims 1-9 and Claims 11-21 Burrell, IV (5,993,089) shows, teaches and claims a data entry system requiring eight fingers. The pending patent application can work with just one refreshable 4-dot braille cell or with just one hand. Burrell, IV (5,993,089) can not work with just one refreshable 4-dot braille cell or with just one hand, but requires 8 bits of data, 8 fingers or 8 dots and not a 4-dot braille cell combined with a 4-dot braille cell.

The Braille Authority of North America (BANA) tested the 8-dot braille code found in Burrell, IV (5,993,089) and refused to use or adopt the 8-bit braille code as an authorized

8-dot braille code or as an alternative 8-dot braille code because the tactile reader was unable to differentiate between the vowels a, e, i or o. In order for Burrell, IV (5,993,089) to work for the blind, the standard 8-dot braille cell requires a centrally located tactile separators between every 8-dot braille cell for the tactile reader to differentiate dot position between the vowels a, e, i or o and the exact position of the dot within the braille cell. The pending patent application "VIRTUAL KEYBOARD AND CONTROL MEANS" was created as a universal new form of tactile reading for the blind and as a method of data entry by one handed and disabled individuals.

Burrell, IV (5,993,089) never uses 8 dots. Burrell, IV (5,993,089) uses a 1-dot braille cell, a 2-dot braille cell, a 3-dot braille cell, a 4-dot braille cell, a 5-dot braille cell, a 6-dot braille cell or a 7-dot braille cell. The insert function is not an 8-dot braille cell because it is never used to represent data or any form of data. Burrell, IV (5,993,089) never uses a complete 8-dot braille cell.

6-dot braille does not use six dots. 6-dot braille uses a 1-dot braille cell, a 2-dot braille cell, a 3-dot braille cell, a 4-dot braille cell or a 5-dot braille cell.

8-dot braille does not use eight dots. 8-dot braille uses a 1-dot braille cell, a 2-dot braille cell, a 3-dot braille cell, a 4-dot braille cell, a 5-dot braille cell, a 6-dot braille cell or a 7-dot braille cell.

The present patent application in a preferred embodiment uses a first 4-bit code produced on a first 4-dot vertical braille cell combined with a second 4-bit code produced on a second 4-dot vertical braille cell, which is shown in FIG. 4A and FIGS. 4B-4C.

The 8 bit code found in Burrell, IV (5,993,089) and the 4 bit code combined with a second 4 bit code found in the pending patent application "VIRTUAL KEYBOARD AND CONTROL MEANS" are not the same codes.

The EBCDIC computer code was the first 8-bit computer code ever created. After IBM created the EBCDIC code, IBM obtained a copyright for intellectual property protection. After creating the EBCDIC code, IBM rearranged the EBCDIC code, added different 8 bit data representation and removed 8 bit data representation, creating the ASCII computer code. IBM obtained a copyright on the rearranged EBCDIC code, now called the ASCII code, for intellectual property protection. The 8-bit code found in Burrell, IV (5,993,089) was rearranged in the pending patent application and now uses a new 4-bit code combined with or followed by a 4-bit code which is shown and taught in the pending patent application but not in Burrell, IV (5,993,089).

The originally filed FIGS. 4A and 4B-C were created using Microsoft's True Type Marlett font. When Microsoft created the monospaced True Type Marlett font they failed to include a space and is the reason why there are dashes between the braille cells. The Marlett font also can not produce a standard 6-dot braille cell because unused dots require a space. FIGS. 4A and 4B-C have been corrected and now show a standard 6-dot braille cell on the top of a data character and a true 4-dot braille cell combined with a true 4-dot braille cell on the bottom. Added FIGS. 5A and 5B-C show a true 3-dot braille cell next to a true 3-dot braille cell on the top of a data character and standard 8-dot braille cell on the bottom; and are for the use of the Examiner only; and are not to be entered as drawings. The 8-dot braille found in FIG. 5A, FIG. 5B-C and in Burrell, IV (5,993,089) was tested and rejected by the Braille Authority of North America (BANA). The true 4-dot braille cell

combined with a true 4-dot braille cell in FIG. 4B have been corrected and now conform to the codes found in FIGS. 1P and 3F. The dash (-) or minus sign true 4-dot braille cell combined with a true 4-dot braille cell in the first line of FIG. 4C has been corrected and now conforms to the code shown in the last line of FIG. 4C, FIGS. 1P and 3G. The standard keyboard's standard quote sign (") has been inserted to show the true 4-dot braille cell combined with a true 4-dot braille cell and that 6-dot braille does not use the standard keyboard's standard quote sign ("). The pending patent application "VIRTUAL KEYBOARD AND CONTROL MEANS" was created as a new 8-dot braille arrangement.

Claims 3-8 have been amended to the claim structure found in Claims 9-18.

With respect to Claims 1, 3-4 rejections, Burrell, IV (5,993,089) teaches, shows and claims an 8-bit code used as a standard 8-dot braille arrangement and method of entering data into an 8-key chord keyboard using 8 fingers. Burrell, IV (5,993,089) can not be used as a standard 8-dot braille arrangement. Burrell, IV (5,993,089) requires a tactile separator between every braille cell. In Burrell, IV (5,993,089), FIG. 6 shows the 8-bit code taught as a standard 8-dot braille cell format with tactile separators between every braille cell. The blind use virtual 6-dot braille cells or virtual 8-dot braille cells and do not use a 3-dot braille cell combined with a 3-dot braille cell for 6-dot braille or a 4-dot braille cell combined with a 4-dot braille cell for 8-dot braille. Burrell, IV (5,993,089) teaches, shows and claims an 8-bit code produced when eight sensors are activated simultaneously by four fingers on the left hand and four fingers on the right hand. Burrell, IV (5,993,089) does not teach, show or claim a first 4-bit code combined with a second 4-bit code wherein an inactive bit is represented by a smaller data character. The 8-bit code in Burrell, IV (5,993,089), as a whole, has been changed and improved in the pending patent application, wherein 29

assigned 8-bit data bytes (more than 10%), of a possible 255 8-bit code, have been rearranged and reassigned different 8-bit binary code representation as a first 4-bit code combined with a second 4-bit code. The pending patent application also does not have the same limitations as the 8-bit binary code arrangement disclosed in US patent 5,993,089. A one handed person can not use the 8-bit code found in US patent 5,993,089. A one handed person can use the invention found in the pending patent application.

In FIG. 6 of Burrell, IV (5,993,089), clearly the examiner can see that the 8-bit code taught and claimed is not a first 4-bit code combined with a second 4-bit code. In FIG. 4A, 4B and 4C, of the pending patent application, a first 4-bit code combined with a second 4-bit code uses a large dot character for an active bit and a small dot character for an inactive dot.

With respect to Claims 3 and 4 rejections, Claim 3 claims activation of a sensor, or what is known in the art as a "hot key", to enter into an eight sensor data entry mode. Burrell, IV (5,993,089) and any other prior art does not teach, show or claim a "hot key", to enter into an eight sensor data entry mode. Claim 4 claims activation of at least one sensor of eight sensors, or what is also known in the art as a "hot key", to enter into an eight sensor data entry mode. Burrell, IV (5,993,089) and any other prior art does not teach, show or claim a "hot key" on eight sensors, to enter into an eight sensor data entry mode.

With respect to Claims 2 and 19 rejections, Burrell, IV (5,993,089) discloses and teaches the numeric bit values for the bits in an first 4-bit code combined with a second 4-bit code. Clearly the examiner can see that the 8-bit code taught and claimed in Burrell, IV (5,993,089) is not the first 4-bit code combined with a second 4-bit code found in the

pending patent application. The pending application teaches, shows and claims the numeric bit values for the bits in a first 4-bit code bit code combined with a second 4-bit code. A tactile braille reader moving their finger across the pending braille arrangement will feel a first row of four dots and then a second row of four dots. Claim 19 is claiming an apparatus for entering a first 4-bit code bit code combined with a second 4-bit code which Burrell, IV (5,993,089) and any other prior art does not teach, show or claim.

With respect to Claim 5, Claim 5 claims the activation of eight sensors to enter into an eight sensor data entry mode. Burrell, IV (5,993,089) and any other prior art does not teach, show or claim activation of eight sensors to enter into an eight sensor data entry mode. Burrell, IV (5,993,089) teaches, shows and claims the activation of all eight sensors to produce the "Insert" function. The pending application teaches, shows and claims activating eight sensors to enter into a first four sensor mode combined with a second four sensor mode.

With respect to Claim 6, Claim 6 claims the activation of at least one sensor of eight sensors to enter into an eight sensor data entry mode to produce a data character using a first 4-bit code bit code combined with a second 4-bit code. Burrell, IV (5,993,089) and any other prior art does not teach, show or claim the activation of at least one sensor of eight sensors to enter into an eight sensor data entry mode to produce a data character using a first 4-bit code bit code combined with a second 4-bit code.

With respect to Claim 7, Claim 7 claims the activation of at least one sensor of eight sensors to enter into an eight sensor data entry mode to produce a function using a first 4-bit code bit code combined with a second 4-bit code. Burrell, IV (5,993,089) and any other prior art does not teach, show or claim the activation of at least one sensor of eight

sensors to enter into an eight sensor data entry mode to produce a function using a first 4-bit code bit code combined with a second 4-bit code.

With respect to Claim 8, Claim 8 claims the activation of at least one sensor of eight sensors to enter into an eight sensor data entry mode to produce a data character string using a first 4-bit code bit code combined with a second 4-bit code. In the art this technology would be known as a "macro". Burrell, IV (5,993,089) and any other prior art does not teach, show or claim the activation of at least one sensor of eight sensors to enter into an eight sensor data entry mode to produce a data character string using a first 4-bit code bit code combined with a second 4-bit code.

With respect to Claim 9, Claim 9 claims a method of using a first 4-bit code bit code combined with a second 4-bit code in an eight sensor data entry mode by the activation of at least one sensor of eight sensors followed by the activation of at least one sensor of eight sensors to produce a data character. A prior art search on Claim 9 would include all 16-bit prior art technologies that produce data. Burrell, IV (5,993,089) and any other prior art does not teach, show or claim the activation of at least one sensor of eight sensors followed by the activation of at least one sensor of eight sensors to produce a data character.

With respect to Claim 10, Claim 10 claims a method of using a first 4-bit code bit code combined with a second 4-bit code in an eight sensor data entry mode by the activation of at least one sensor of eight sensors followed by the activation of at least one sensor of eight sensors to produce a data character string. In the art this technology would be known as a "macro". A prior art search on Claim 10 would include all 16-bit prior art technologies that produce data. Burrell, IV (5,993,089) and any other prior art does not

teach, show or claim the activation of at least one sensor of eight sensors followed by the activation of at least one sensor of eight sensors to produce a data character.

With respect to Claim 11, Claim 11 claims the activation of at least one sensor of a first set of four sensors combined with the non-activation of a second set of four sensors to produce a vowel using a first 4-bit code bit code combined with a second 4-bit code. Burrell, IV (5,993,089) and any other prior art does not teach, show or claim the activation of at least one sensor of a first set of four sensors combined with the non-activation of a second set of four sensors to produce a vowel using a first 4-bit code bit code combined with a second 4-bit code. Burrell, IV (5,993,089) teaches, shows and claims activation of at least one sensor of a first set of four sensors that requires and must be used in simultaneous combination with the non-activation of a second set of four sensors to produce an 8-bit binary code. The pending patent application does not require simultaneous non-activation of a second set of four sensors to produce a first 4-bit code bit code combined with a second 4-bit code as shown in FIGS. 4A, 4B or 4C.

With respect to Claim 12, Claim 12 claims the activation of at least one sensor of a first set of four sensors combined with the activation at least one sensor of a second set of four sensors to produce a vowel using a first 4-bit code bit code combined with a second 4-bit code. Burrell, IV (5,993,089) and any other prior art does not teach, show or claim the activation of at least one sensor of a first set of four sensors combined with the activation of at least one sensor of a second set of four sensors to produce a vowel using a first 4-bit code bit code combined with a second 4-bit code. Burrell, IV (5,993,089) teaches, shows and claims activation of at least one sensor of a first set of four sensors that requires and

must be used in simultaneous combination with the activation at least one sensor of a second set of four sensors to produce an 8-bit binary code.

With respect to Claim 13, Claim 13 claims the activation of at least one sensor of a first set of four sensors combined with the activation at least one sensor of a second set of four sensors to produce a consonant using a first 4-bit code bit code combined with a second 4-bit code. Burrell, IV (5,993,089) and any other prior art does not teach, show or claim the activation of at least one sensor of a first set of four sensors combined with the activation of at least one sensor of a second set of four sensors to produce a consonant using a first 4-bit code bit code combined with a second 4-bit code. Burrell, IV (5,993,089) teaches, shows and claims activation of at least one sensor of a first set of four sensors that requires and must be used in simultaneous combination with the activation at least one sensor of a second set of four sensors to produce an 8-bit binary code.

With respect to Claim 14, Claim 14 claims the non-activation of a first set of four sensors combined with the activation at least one sensor of a second set of four sensors to produce a space using a first 4-bit code bit code combined with a second 4-bit code. Burrell, IV (5,993,089) and any other prior art does not teach, show or claim the non-activation of a first set of four sensors combined with the activation of at least one sensor of a second set of four sensors to produce a consonant using a first 4-bit code bit code combined with a second 4-bit code. Burrell, IV (5,993,089) teaches, shows and claims activation of at least one sensor of a first set of four sensors that requires and must be used in simultaneous combination with the activation at least one sensor of a second set of four sensors to produce an 8-bit binary code.

With respect to Claim 15, Claim 15 claims the non-activation of a first set of four sensors combined with the activation at least one sensor of a second set of four sensors to produce a punctuation mark using a first 4-bit code bit code combined with a second 4-bit code. Burrell, IV (5,993,089) and any other prior art does not teach, show or claim the non-activation of a first set of four sensors combined with the activation of at least one sensor of a second set of four sensors to produce a punctuation mark using a first 4-bit code bit code combined with a second 4-bit code. Burrell, IV (5,993,089) teaches, shows and claims activation of at least one sensor of a first set of four sensors that requires and must be used in simultaneous combination with the activation at least one sensor of a second set of four sensors to produce an 8-bit binary code.

With respect to Claim 16, Claim 16 claims the activation of at least one sensor of a first set of four sensors combined with the activation at least one sensor of a second set of four sensors to produce a symbol using a first 4-bit code bit code combined with a second 4-bit code. Burrell, IV (5,993,089) and any other prior art does not teach, show or claim the activation of at least one sensor of a first set of four sensors combined with the activation of at least one sensor of a second set of four sensors to produce a symbol using a first 4-bit code bit code combined with a second 4-bit code. Burrell, IV (5,993,089) teaches, shows and claims activation of at least one sensor of a first set of four sensors that requires and must be used in simultaneous combination with the activation at least one sensor of a second set of four sensors to produce an 8-bit binary code.

With respect to Claim 17, Claim 17 claims the activation of at least one sensor of a first set of four sensors combined with the activation at least one sensor of a second set of four sensors to produce a number using a first 4-bit code bit code combined with a

second 4-bit code. Burrell, IV (5,993,089) and any other prior art does not teach, show or claim the activation of at least one sensor of a first set of four sensors combined with the activation of at least one sensor of a second set of four sensors to produce a number using a first 4-bit code bit code combined with a second 4-bit code. Burrell, IV (5,993,089) teaches, shows and claims activation of at least one sensor of a first set of four sensors that requires and must be used in simultaneous combination with the activation at least one sensor of a second set of four sensors to produce an 8-bit binary code.

With respect to Claim 18, Claim 18 claims the activation of at least one sensor of a first set of four sensors combined with the activation at least one sensor of a second set of four sensors to produce a function using a first 4-bit code bit code combined with a second 4-bit code. Burrell, IV (5,993,089) and any other prior art does not teach, show or claim the activation of at least one sensor of a first set of four sensors combined with the activation of at least one sensor of a second set of four sensors to produce a function using a first 4-bit code bit code combined with a second 4-bit code. Burrell, IV (5,993,089) teaches, shows and claims activation of at least one sensor of a first set of four sensors that requires and must be used in simultaneous combination with the activation at least one sensor of a second set of four sensors to produce an 8-bit binary code.

With respect to Claim 32, Burrell, IV (5,993,089) and any other prior art does not teach, show or claim shifting out of a first mode and shifting into a second mode by entering at least one data character.

With respect to Claim 33-35 rejections, Burrell, IV (5,993,089) and any other prior art does not teach, show or claim shifting out of a first mode and shifting into a second mode by entering a language code data character string, a country code data character

string or a country's area code data character string. The pending application teaches, shows and claims shifting out of a first preferred standard English data entry mode and shifting into a secondary language mode by entering a language code data character string, a country code data character string or a country's area code data character string.

With respect to Claim 20-31 rejections, the rejection of Claims 20 through 31 as being obvious and unpatentable based on no prior art references is respectfully traversed. Burrell, IV (5,993,089) does not teach, show or claim activation of a single sensor to move an object in any direction. Burrell, IV (5,993,089) and any prior art does not teach, show or claim activation of a single sensor on at least eight sensors to move an object in any direction. The pending application teaches, shows and claims activation of a single sensor on at least eight sensors to move an object in any direction. One preferred embodiment of the present invention, found in the pending patent application, would use eight fingers positioned on the home row of a split space bar computer keyboard. Activation of the left or right space bar while in the standard typing mode will produce a space. Activation of the left and right space bar simultaneously while in the standard typing mode will exit the standard typing mode and enter a two sensor movement mode. Activation of the left and right space bar simultaneously while in the two sensor movement mode will exit the two sensor movement mode and enter a second two sensor movement mode or return to the standard typing mode. It would not have been obvious to one of ordinary skill in the art to use two sensors to move an object in two opposite directions. The two sensor movement invention on at least eight sensors would have been used or would have been prior art if it were obvious. The particular fingers used to activate the sensors is not an obvious choice of the user. Most computer keyboards do not have a left and right space bar. An operator

would not use his or her pinky to achieve two sensor movement on at least eight sensors because the use of the pinkies would require the use of at least ten sensors.

In reply to the Examiner's remark that a user is not required to use his or her thumb to activate a particular sensor, the Examiner is correct and the Claims are now amended to reflect the Examiner's objections. After filing the present patent application, the inventor approached Tink, located in New York City, to manufacture his "Virtual Keyboard" technology using their screen printed sensors. After becoming aware of the two sensor movement technology using at least eight sensors, Tink started presenting the two sensor movement technology to clients. Realizing the claims in the present patent application were not broad enough to protect the two sensor movement technology for use in games, the Inventor filed pending patent application "TWO SENSOR MOVEMENT".

The prior art reference Holden (US 4,655,621) and European Patent Office Patent Application 0134160 requires at least ten keys, one for each finger, and up to twenty-eight keys for the invention to work. A reduction in the amount of keys used to produce data, four keys combined with four keys found in the pending patent application or at least eight keys found in Burrell, IV (5,993,089), would constitute an improvement in data entry technology. Therefore the Holden prior art reference is invalid.

CONCLUSION

The present invention, found in the pending patent application, constitutes an improvement in the art of chordic keyboard data entry found in any prior art or in U.S. patent 5,993,089 to Burrell, IV. The pending patent application uses a first 4-bit code combined with a second 4-bit code wherein an inactive bit is represented by a smaller data character and an active bit is represented by a larger data character to produce a new 8 dot braille arrangement, a new chordic data entry method for all alphanumeric data for two handed or one handed individuals, a new method of entering multilingual alphanumeric data, an improved faster method of movement using only two sensors on a keyboard and an improved faster method of fixing typographical errors on a keyboard while entering data. The differences between the new subject matter taught and claimed in the pending patent application and all previous prior art references would not have been obvious at the time the invention was made to one of ordinary skill in the art or to one not skilled in the art. Accordingly, the prior art patents do not teach or disclose the claimed features of the amended Claims 1 through 36. For these reasons, it is respectfully submitted that applicant's Claims 1 through 36 should be allowed. Therefore, the invalid Claim rejections should be withdrawn and the pending patent application should be issued.

Respectfully submitted,
Ezra Sutton, P.A.

Ezra Sutton
Reg. No. 25,770

Plaza 9, 900 Route 9,
Woodbridge, New Jersey 07095
1-732-634-3520
ES/jb